



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/963,567

09/27/2001

Tai-Her Yang

YANG3073/EM/7272

8926

7590

05/28/2004

BACON & THOMAS
625 Slaters Lane - 4th Floor
Alexandria, VA 22314

EXAMINER

LE, DANG D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,567

Applicant(s)

YANG, TAI-HER

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 22-37 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s):

- Ball or roller bearings situated in the helical structure between the rotor and the shaft as recited in claim 25.
- The varying magnetic fields along a length of the rotor recited in claim 30.
- The electrical characteristics of the rotor varying along a length of the rotor recited in claim 31.
- The physical properties of said rotor varying along a length of the rotor recited in claim 32.
- The properties of both magnetic field structure and rotor being varied in an axial direction as recited in claim 33.
- The axial length of the rotor recited in claim 37.

No new matter should be entered. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 24-36 have been renumbered 25-37, respectively. (There are two claims 24).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 25, 30-33, and 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is not clear if the balls are located in the grooves formed on the shaft surface and on an inner circumferential surface of the rotor. If this is the case, there must be grooves formed on both surfaces and the machine can work as claimed. However, if the ball or roller bearings are situated between the shaft and the rotor, it is not clear how the axial movement can take place. The drawings do not show the feature claimed in claim 25.

Art Unit: 2834

In addition, it is not clear how the magnetic fields vary along a length of the rotor, the electrical characteristics of the rotor vary along a length of the rotor, the physical properties of the rotor vary along a length of the rotor, and the properties of both magnetic field structure and rotor are varied in an axial direction as respectively shown in claims 30-33.

Regarding claim 37, it is neither clear how the length of the rotor is define (coil end to coil end or just the rotor core?)

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 22-24, 28, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Beyers (3,525,005).

Regarding claim 22, Beyers shows an electric machine, comprising:

- An electric field structure (30);
- A rotor (20) arranged to rotate relative to the electric field structure;
- A helical structure (22) situated between the rotor (20) and a rotary shaft (16), and a pre-stressed spring (24) situated at one end of the rotor, wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft in response to reverse torque resulting from

interaction between said rotor, said magnetic field structure, and a load or driving device (34).

Regarding claims 23, 24, 28, and 30, it is noted that Beyers also shows all of the limitations of the claimed invention.

8. Claims 22-27, 29 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Martinek (2,978,621).

Regarding claim 22, Martinek shows an electric machine, comprising:

- An electric field structure (2);
- A rotor (5) arranged to rotate relative to the electric field structure;
- A helical structure (9) situated between the rotor (5) and a rotary shaft (10), and a pre-stressed spring (8) situated at one end of the rotor, wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft in response to reverse torque resulting from interaction between said rotor, said magnetic field structure, and a load or driving device (12).

Regarding claims 23-27, 29, and 34-36, it is noted that Martinek also shows all of the limitations of the claimed invention.

9. Claims 22 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Porsche (925,504).

Regarding claim 22, Porsche shows an electric machine, comprising:

- An electric field structure (15);
- A rotor (11) arranged to rotate relative to the electric field structure;

- A helical structure (13) situated between the rotor and a rotary shaft (10), and a pre-stressed spring (12) situated at one end of the rotor, wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft in response to reverse torque resulting from interaction between said rotor, said magnetic field structure, and a load or driving device.

Regarding claims 30-33, it is noted that Porsche also shows all of the limitations of the claimed invention.

10. Claims 22-26, 28, 29, and 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Price (1,131,551).

Regarding claim 22, Price shows an electric machine, comprising:

- An electric field structure (21);
- A rotor (1) arranged to rotate relative to the electric field structure;
- A helical structure (6) situated between the rotor and a rotary shaft (5), and a pre-stressed spring (20) situated at one end of the rotor, wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft in response to reverse torque resulting from interaction between said rotor, said magnetic field structure, and a load or driving device.

Regarding claims 23-26, 28, 29, and 34-37, it is noted that Price also shows all of the limitations of the claimed invention.

Claim Rejections - 35 USC § 103

Art Unit: 2834

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beyers in view of Russell (2,446,393).

Regarding claim 25, Beyers shows all of the limitations of the claimed invention except for the helical structure further including ball or roller bearings situated in the helical structure between the rotor and the shaft.

Russell shows the helical structure further including ball or roller bearings situated in the helical structure between the rotor and the shaft for the purpose of providing an axial movement.

Since Beyers and Russell are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use balls as taught by Russell for the purpose discussed above.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2834

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Information on How to Contact USPTO

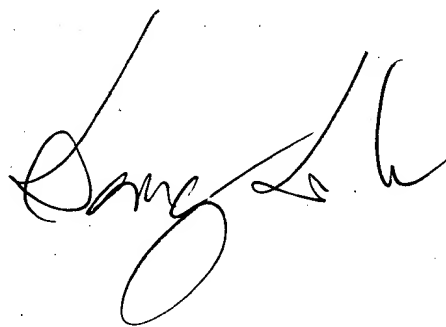
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/25/04

A handwritten signature in black ink, appearing to read "Dangle", is written over the printed name.

DANGLE
PRIMARY EXAMINER